

REMARKS/ARGUMENTS

The Examiner is thanked for granting an interview to the Applicant on October 17, 2005. During the interview, the Applicant respectfully submitted that *Houlsdworth* does NOT teach or suggest: storing a reference that is likely to be the only reference to an object on a reference stack. Moreover, that the cited art does NOT teach or suggest: translating a command into another command that indicates that it is likely that a reference is the only reference to an object when (a) it is likely that the command places a reference to an object on an execution stack and (b) there is a change in the flow control between the time the command places the reference on the execution stack and the time the reference is used to access the object, thereby effectively indicating the command it is likely to be the only reference to the object.

It is noted that U.S. Patent NO. 6,304,949 (*Houlsdworth*) states:

FIGS. 2 to 7 each schematically represent a number of discrete memory areas from the system of FIG. 1, and in particular a heap memory HM holding a large number of data objects DO for use by various program threads. The following examples are compliant with memory management techniques in the Java™ virtual machine and the terminology should be construed accordingly. It will be recognized however that the present invention is not restricted to Java-compliant systems, object-oriented language systems, or to purely virtual memory management.

In the arrangement shown, it is the heap memory HM for which garbage collection is performed such that data objects are removed following their last or only reference by a program. Each operating program thread has its own collection of stack frames SF. To localize the garbage collection process (as will be described), each stack frame is provided with a respective reference stack RS. A handle table HT is provided for carrying pointers identifying data object locations within the heap. It will be noted that, whereas conventional systems constrain all references to heap objects to be routed via a handle table, in the embodiments of the present invention, objects are referenced direct by pointers from both stack frames SF and their associated reference stack RS. In this way, a handle table may under certain circumstances be avoided, as in the example to be described below with reference to FIG. 7. (Col. 4, lines 12-39)


However, it is respectfully submitted that *Houlsdworth* does NOT teach or suggest: storing a reference that is likely to be the only reference to an object on a reference stack. Instead, *Houlsdworth* teaches: "to enable localizing of the garbage collection procedure, reference stacks (RS) are provided for each thread stack frame (SF) such as to identify, preferably via a per-thread reference table (TT), data objects

(DO) referenced from only a single frame, which objects are deleted on conclusion of that frame (*Houlsdworth*, Abstract).

Based on the foregoing, it is submitted that all the claims are patentably distinct over the cited art of record. Additional limitations recited in the independent claims or the dependent claims are not further discussed because the limitations discussed above are sufficient to distinguish the claimed invention from the cited art. Accordingly, Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 500388 (Order No. SUN1P833). Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

Respectfully submitted,
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